CLAIMS:

1. A process for producing a lubricating oil basestock which comprises:

(a) conducting a lubricating oil feedstock to a solvent extraction zone and under-extracting the feedstock to form an under-extracted raffinate wherein the extraction zone solvent contains water added in the amount from about 1 to about 10 vol.%, based on extraction solvent, such that the extraction solvent contains from 3 to 10 vol.% water;

(b) stripping the under-extracted raffinate of solvent to produce an under-extracted raffinate feed having a dewaxed oil viscosity index from about 75 to about 105;

(c) passing at least a portion of the raffinate feed to a first hydroconversion zone and processing the raffinate feed in the presence of a non-acidic catalyst at a temperature of from 320 to 420° C, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to 17.3 mPa), space velocity of 0.2 to 5.0 LHSV and a hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a first hydroconverted raffinate;

(d) passing the hydroconverted raffinate from the first hydroconversion zone to a second hydroconversion zone and processing the hydroconverted raffinate in the presence of a non-acidic catalyst at a temperature of from 320 to 420° C provided that the temperature in the second hydroconversion is not greater than the temperature in the first hydroconversion zone, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to 17.3 mPa), a space velocity of from 0.2 to 5.0

LHSV and a hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a second hydroconverted raffinate;

(e) passing at least a portion of the second hydroconverted raffinate to a hydrofinishing reaction zone and conducting cold hydrofinishing of the second hydroconverted raffinate in the presence of a hydrofinishing catalyst_which is at least one Group VIB or Group VIII metal on a refractory metal oxide support at a temperature of from 200 to 360° C, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to 17.3 mPa), a space velocity of from 0.2 to 10 LHSV and hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a hydrofinished raffinate.

2. The process of claim 1 wherein the solvent extraction zone includes an extraction solvent selected from at least one of N-methyl-2-pyrrolidone, furfural and phenol.

3. The process of claim 2 wherein the extraction zone conditions include a solvent:oil ratio is from 0.5 to 5.0.

4. The process of claim 1 wherein the raffinate feed has a dewaxed oil viscosity index from about 80 to about 95.

5. The process of claim 1 wherein the non-acidic catalyst has an acidity less than about 0.5, said acidity being determined by the ability of the catalyst to convert 2-methyl-2-pentene to 3-methyl-2-pentene and 4-methyl-2-pentene and is expressed as the mole ratio of 3-methyl-2-pentene to 4-methyl-2-pentene.

6. The process of claim 1 wherein the non-acidic catalyst in the first hydroconversion zone is at least one of a Group VIB metal and non-noble Group VIII metal.

7. The process of claim 1 wherein the space velocity in the first and second hydroconversion zones is from about 0.3 to 3.0 LHSV.

8. The process of claim 1 wherein the temperature in the second hydroconversion zone is about 5 to 100°C lower than the temperature in the first hydroconversion zone.

9. The process of claim 1 wherein the temperature in the hydrofinishing zone is from about 290 to 350°C.

10. The process of claim 1 wherein the catalyst in the hydrofinishing zone includes at least one Group VIII noble metal.

11. The process of claim 10 wherein the catalyst is Pt, Pd or a mixture thereof.

12. The process of claim 1 wherein the second hydroconverted raffinate is passed to a separator to separate low boiling products from hydroconverted raffinate prior to passing to the hydrofinishing reaction zone.

13. The process of claim 12 wherein hydroconverted raffinate from the separator is passed to a dewaxing zone and subjected to at least one of solvent dewaxing and catalytic dewaxing prior to passing to the hydrofinishing zone.

14. The process of claim 13 wherein catalytic dewaxing is accomplished with a dewaxing catalyst containing at least one 10 ring molecular sieve.

15. The process of claim 1 wherein the second hydroconverted raffinate is passed to a dewaxing zone and catalytically dewaxed using a sulfur and nitrogen tolerant molecular sieve prior to passing to the hydrofinishing zone.

16. The process of claim 1 wherein the hydrofinished raffinate is passed to a separator to separate low boiling products from the hydrofinished raffinate to produce a second hydrofinished raffinate.

17. The process of claim 16 wherein the second hydrofinished raffinate is passed to a dewaxing zone and subjected to at least one of solvent dewaxing and catalytic dewaxing to produce a dewaxed second hydrofinished raffinate.

18. The process of claim 17 wherein the catalytic dewaxing is accomplished with a dewaxing catalyst containing at least one 10 ring molecular sieve.

19. The process of claim 1 wherein the hydrofinished raffinate is passed to a dewaxing zone and dewaxed using a sulfur and nitrogen tolerant molecular sieve.

20. The process of claim 17 wherein the dewaxed second hydrofinished raffinate is further hydrofinished in a second hydrofinishing zone.

21. The process of claim 1 wherein the under-extracted raffinate feed is solvent dewaxed under solvent dewaxing conditions prior to entering the first hydroconversion zone.

22. The process of claim 1 additionally comprising adding additives to the lubricating oil basestock.

23. The process of claim 22 wherein the additives comprise at least one detergent, dispersant, antioxidant, friction modifier, demulsifier, VI improver and antifoamant.

24. The process of claim 1 wherein second hydroconversion zone additionally contains a catalytic dewaxing catalyst.

25. A process for producing a lubricating oil basestock which comprises:

(a) conducting a lubricating oil feedstock, said feedstock being a distillate fraction, to a solvent extraction zone and under-extracting the feedstock to form an under-extracted raffinate;

(b) stripping the under-extracted raffinate of solvent to produce an under-extracted raffinate feed having a dewaxed oil viscosity index from about 75 to about 105;

(c) passing at least a portion of the raffinate feed to a hydroconversion zone and hydroconverting the raffinate feed under hydroconversion conditions to produce a basestock containing at least about 90% saturates and a VI less than about 120, said basestock having volatility-viscosity properties characterized by the equation $N = (32 - (4)(V)) \pm 1$ where N is the Noack volatility and V is the viscosity in the range 3.5 to 6.0 cSt at 100°C.

26. A process for producing a lubricating oil basestock which comprises:

(a) conducting a lubricating oil feedstock to a solvent extraction zone and under-extracting the feedstock to form an under-extracted raffinate wherein the extraction zone solvent contains water added in the amount from about 1 to about 10 vol.%, based on extraction solvent, such that the extraction solvent contains from 3 to 10 vol.% water;

(b) stripping the under-extracted raffinate of solvent to produce an under-extracted raffinate feed having a dewaxed oil viscosity index from about 75 to about 105;

(c) passing at least a portion of the raffinate feed to a first hydroconversion zone and processing the raffinate feed in the presence of a non-acidic catalyst at a temperature of from 320 to 420° C, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to

17.3 mPa), space velocity of 0.2 to 5.0 LHSV and a hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a first hydroconverted raffinate;

(d) passing the hydroconverted raffinate from the first hydroconversion zone to a second hydroconversion zone and processing the hydroconverted raffinate in the presence of a non-acidic catalyst at a temperature of from 320 to 420° C provided that the temperature in the second hydroconversion is not greater than the temperature in the first hydroconversion zone, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to 17.3 mPa), a space velocity of from 0.2 to 5.0 LHSV and a hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a second hydroconverted raffinate;

(e) passing at least a portion of the second hydroconverted raffinate to a dewaxing zone and conducting at least one of catalytic and solvent dewaxing under dewaxing conditions to produce a dewaxed hydroconverted raffinate;

(f) passing at least a portion of the dewaxed hydroconverted raffinate to a hydrofinishing reaction zone and conducting cold hydrofinishing of the second hydroconverted raffinate in the presence of a hydrofinishing catalyst which is at least one Group VIB or Group VIII metal on a refractory metal oxide support at a temperature of from 200 to 360° C, a hydrogen partial pressure of from 1000 to 2500 psig (7.0 to 17.3 mPa), a space velocity of from 0.2 to 10 LHSV and hydrogen to feed ratio of from 500 to 5000 Scf/B (89 to 890 m^3/m^3) to produce a hydrofinished raffinate.